Nutrition News
PUBLISHED BY NATIONAL DAIRY COUNCIL, CHICAGO

CONTENTS

Article — Page 13
Describes the work of the public health nutritionist

Story — Page 14
Reveals role of diet in training aviators

Digests — Page 14
Summarize new research pertaining to adequate diet

Study — Page 15
Tells effects of vitamin D on teeth

Plan — Page 15
Offers practical suggestions for a nutrition project

News — Page 15
Presents current items of popular interest

Books — Page 16
New publications obtainable at small cost

NUTRITION WORK IN PUBLIC HEALTH PROGRAMS

By MARJORIE M. HESELTINE
Specialist in Nutrition
Children's Bureau
U. S. Department of Labor

Nutrition work in public-health programs has been going on longer than many people realize, but only recently has it received attention commensurate with its importance. As early as 1888 the American Public Health Association recognized the part played by food in the maintenance of positive health by offering the Lomb prize for the best essay on an assigned subject: "Practical, Sanitary, and Economic Cooking Adapted to Persons of Moderate and Small Means." The prize winner was Mrs. Mary Hinman Abel, who later helped to launch the home-economics movement.

During the decade between 1910 and 1920, activities in several fields called public attention to the importance of food and other factors of good nutrition. The physicial examinations of soldiers drafted for war service revealed many defects traceable to faulty nutrition in early childhood. Physicians who examined babies and preschool children in child-health conferences sponsored by public-health agencies found widespread evidences of malnutrition. At the same time animal-feeding experiments in nutrition laboratories were demonstrating the relation of food to health at all ages and particularly during periods of rapid growth.

Much of the pioneer work in establishing nutrition service as an integral part of programs for the betterment of health was done by health agencies supported by voluntary contributions, but three State health departments and a few local health units have carried on nutrition work continuously for as long as 20 years. The Social Security Act, through grants-in-aid for extension of health services for mothers and children, has enabled additional State health departments to appoint one or more nutritionists. In the current fiscal year, 24 State health departments have budgeted funds for this purpose.

Miss Heseltine

Public-health workers are faced with a multiplicity of nutritional problems arising from three general causes: Indigence, ignorance, and inertia. Ignorance and inertia are being combated by education. Working closely with other educational agencies in the community, public-health workers teach individuals, families, and those in charge of feeding large groups of people to make the most of whatever resources they have—or can have through their own efforts. In rural areas, for example, the principal part of an educational program for better nutrition may be convincing families that they can be better fed at less cost if they will make the most of their opportunities for producing food and storing the surplus. To combat indigence, public-health workers strive to convince those in charge of funds for public assistance or other forms of relief

(Continued on Page Sixteen)

APRIL, 1939 • • VOLUME 2 • • NUMBER 4

Food MAKES A DIFFERENCE

A TRUE STORY

Aviation, one of the newest and most popular professions, demands a high degree of physical perfection. Training in government schools includes the use of an adequate diet as part of the health regime.

The aviator is the idol of American youth today. According to recent statistics, three out of four Americans under 30 years of age want to learn how to fly; and surveys of vocational choices of high school students show that a large proportion of the boys want to be aviators. Since its beginnings 34 years ago, aviation has made great strides; and as a career, it offers splendid opportunities.

The United States Army Air Corps maintains one of the finest training schools in the world at Randolph Field and Kelly Field, Texas. Candidates for appointment as "flying cadets" must be between the ages of 20 and 27, must have completed at least two years of college work, must be of excellent character, sound physique, and in practically perfect health.

The physical condition of flyers is of primary importance and the entrance requirements for flying training are even higher than for enlistment in the Regular Army. Particular importance is attached to eyesight, hearing, respiration, and conditions of the heart and nervous system.

Of the many applicants for admission to the U. S. Army Air Corps Training Center, approximately four-fifths are rejected because of their lack of physical fitness. Improper diet and poor health habits are partly responsible for the unsatisfactory physical condition of many of the rejected applicants.

Milk is always on the tables in the mess hall at Randolph Field.

The young men who are accepted as cadets are given rigid examinations every six months. Any student who fails to keep up with the required standard in physical condition, training or conduct is eliminated from the course. About fifty per cent of the cadets complete the course of training.

Diet Important

An adequate diet helps the cadets to meet the high physical standards of the training schools. A glance at the menus served at Randolph Field shows that the cadets receive all the foods essential to health. A sample breakfast menu includes fruit or tomato juice, cereal, bacon and eggs, toast and butter, jelly and honey, milk and coffee. Ice cream appears on the dinner or supper menu every day—sometimes it is served at both meals. Nine or ten servings of fruits and vegetables appear on a day's menus.

During February, 1939, an average of 290 cadets consumed 225 quarts of milk and 6 quarts of cream daily, plus 100 quarts of buttermilk a month. Twenty-four gallons of ice cream, 30 pounds of butter and 45 dozen eggs are eaten each day.

Only a small percentage of the young men who want to be aviators ever attain their goal; and in many cases their failure is due to physical defects which could have been prevented. A strong, sound body is in large measure the result of healthful living: plenty of rest and sleep, exercise in the fresh air, and an adequate diet based on the protective foods—milk, vegetables, fruits and eggs. Young men and boys who aspire to a career in aviation or any other field which requires a high degree of physical fitness should begin early to observe the rules of health, in order to avoid disappointment in later life.

[redacted]

Nutrition research studies such as those reported below contribute to our knowledge of the optimum diet and its contribution to human health.

[redacted]

An experiment in which five adults lived for six months on a diet low in vitamin A showed that such a diet not only causes night blindness but narrows the field of vision. The tests showed that a moderately active person weighing 132 pounds should have at least 3,600 international units of vitamin A daily, an amount easily supplied by a diet rich in dairy products, eggs, and leafy green and yellow vegetables.

[redacted]

Recent work carried out on the nutritive value of sterilized milk is reported as showing definitely that the protein, vitamin B_1 and vitamin C values are decreased by the severe heat treatment. Vitamin C is decreased by half, and vitamin B_1 by 30 per cent. The authors say that sterilized milk is not the equivalent of raw or pasteurized milk and that if it is used to replace them, its shortcomings must be repaired by the addition of the necessary supplements.

[redacted]

Studies on retention of calcium prove the importance of milk in the diet. The average human diet without milk is not only inadequate as a source of calcium, but the percentage of calcium retained by the body is less than in the same diet with added milk. In a diet adequate in phosphorus, the amount of phosphorus retained is found to be dependent on the amount of calcium retained.

[redacted]

A diet deficient in calcium, the element most frequently lacking in American diets, is now known to produce certain types of paralysis in animals. This paralysis is of hemorrhagic origin and is possibly akin to certain brain hemorrhages in man. Too little calcium in the blood has already been identified as the cause of tetany, a convulsive disorder.

A SCIENTIFIC STUDY

By Dr. Ewing Cleveland McBeath
Professor of Dentistry
School of Dental and Oral Surgery
Columbia University

A number of recent investigators have discussed the effect of nutritional factors on dental caries. In a four-year study of about 800 children in New York orphanages, ranging in age from 6 to 14, we have collected data especially regarding the effects of vitamin D. Many of the children were available for successive years.

Three tooth examinations were made each year and records were kept of quality and color of enamel, stains, cleanliness and caries, or abnormal conditions. Progress of caries between examinations was reported as the number of new carious surfaces per 100 days per mouth.

During the first year of the study, the control group received the regular school diet, while the experimental group was given a revised diet modeled after that of Boyd, Drain and Nelson, supplying 1 quart of milk per day, fresh fruits and vegetables, and cod liver oil (about 800 U.S.P. units of vitamin D). The amount of caries in the group receiving the revised diet was small compared with that in the control group.

During the second year the observations were repeated but as far as possible the groups were reversed. This showed the effects of individual susceptibility to caries to be negligible compared with the effects of nutritional factors. Two new types of experiments were added during the second year: administration of viosterol, which gave a moderate reduction of caries, and exposure of chest and back twice weekly to a quartz mercury lamp, which gave a reduction comparable to that of the feeding of cod liver oil.

With some extensions the third year was a repetition of the first two.

Vitamin D Milk Fed

The largest number of children was studied during the fourth year. Three vitamin D milks of various potencies (daily intake of 250, 400 and 800 U. S. P. units) and plain milk were given to the four experimental groups. Results showed that the feeding of plain milk gave a slight reduction in caries, and that increasing vitamin D intake with the milk gave progressively further reduction.

(Continued on Page Sixteen)

Milk at College — For three successive years, Princeton University seniors have voted milk their most popular beverage in the annual class poll taken before graduation. The average milk consumption of a Princeton student is estimated at a little less than a quart a day.

At the University of Wisconsin, there are consumed annually in the dining halls and cafeterias an estimated 5,700 pounds of cheese; 84,300 pounds of butter; 117,000 gallons of milk; and 9,300 gallons of cream.

Vitamin Concentrates — Vitamins have caught the popular fancy, and are household words. But it is the opinion of many that the present indiscriminate use of vitamin concentrates without consideration of the interrelationships of minerals, vitamins and other food substances, is only a fad which will soon die out. Nutritionists have shown repeatedly that concentrates are unnecessary if the daily meals contain in abundance those foods known to be essential to an adequate diet.

Food Habits — A study has been made of the food habits of 1,624 children in the sixth and seventh grades of ten Chicago schools.

The daily food intake records which were kept revealed that only 31 per cent of the group were having daily the minimum standard of one pint of milk, three servings of vegetables and fruits, and one serving of protein food. Between-meal eating was common, sweet foods predominating.

This study has clearly shown the need for educating both children and parents in food values and meal planing.

A PRACTICAL PLAN

By Miss Eleanor R. Maclay
Nutrition Department
School of Household Administration
University of Cincinnati

Every Tuesday afternoon for the next eight weeks, sixteen families will arrive at the University for a dinner meeting. They are participating in the thirteenth annual cooperative project of the School of Household Administration of the University and the Aid to Dependent Children Department of Hamilton County. The purpose of this project is: (1) to give students experience with health, economic, psychological and social problems of real families, (2) to help these families to raise their standards and to get greater satisfactions in life. The program includes family visits throughout the semester, as well as the dinner meetings.

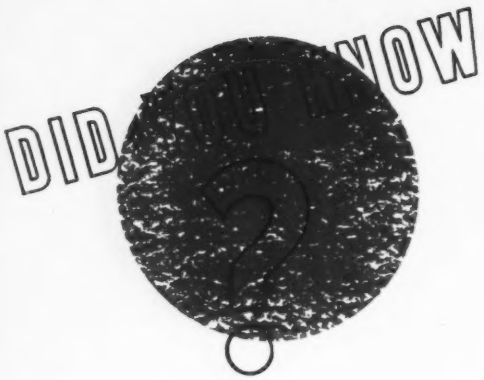
Family Visiting

In preparation for the family visiting, a group of Seniors takes a two credit course, "Principles of Social Case Work," taught by a member of the Aid for Dependent Children staff. It is not assumed that the students are "trained social workers" and their work is under close supervision of the Aid to Dependent Children staff. A visit in each home is made every ten days. The students plan and check budgets, observe problems in family relationships, child care and other phases of home management and attempt to find a means for solving them. Since it is believed many family problems have some physical difficulty as a basis, examinations are given the mothers and children at the Cincinnati General Hospital. Correctional work is followed up.

Dinner Meetings

Upon arrival at 4:30 o'clock, the families are divided into groups. The program for the mothers includes discussions with staff members of the school. The family visitors eat with the mothers at small tables and after the meal talk over food and nutrition problems. A brief recreation period follows. The pre-school children are cared for by another group of students under the supervision of the head teacher of the University Nursery School. Other students direct the activities of four groups of older children. Their programs center around health, use of leisure time, personality development, family relationships and the

(Continued on Page Sixteen)



—that the Waldorf-Astoria now has a very popular milk bar? The demand is said to have originated with the debutantes.

—that potatoes were introduced into Virginia from England by way of Bermuda, in 1621? This discovery upsets the belief that the Virginians learned potato planting from the Indians.

—that government scientists are working on a method of converting lactic acid in milk into acrylic acid? This is useful in making transparent plastics that can be substituted for glass.

—that ultra-violet radiation combined with other more usual food preservation practices makes possible longer storage of meat and other foods without spoiling or changes of color?

—that there are 101 recognized substances in milk, but no chemist has ever succeeded in putting them together and getting milk?

—that a Johns Hopkins University eye specialist has gone to the Arctic to see whether he can help Eskimos suffering from night blindness?

—that milk led all products as the largest single source of farm cash income in 1938 with a total of $1,430,000,000?

—that 5.9 per cent of all the milk produced in the U. S. in 1937 was used in the manufacture of cheese?

—that synthetic wool is being made from casein? This wool is capable of taking the dyes used in coloring real wool.

THINGS YOU'LL LIKE TO READ

WELL-NOURISHED CHILDREN — Published as Folder 14 by the Children's Bureau of the United States Department of Labor in Cooperation with the Bureau of Home Economics of the United States Department of Agriculture. March 1939. 16 pages.

Marjorie M. Heseltine as specialist in nutrition for the Children's Bureau, shared in the preparation of this leaflet. In simple language it outlines the selection of food for children as part of a food plan for the whole family and stresses the importance of establishing good food habits during childhood as essential preparation for health throughout life.

FOOD FOR HEALTHFUL LIVING—Bulletin 197 of the Agricultural Extension Service, Ohio State University. November 1938. Free.

This concise, well-illustrated booklet tells in simple language what to eat to attain good health. It includes a chart of the vitamins and a brief discussion of each.

MILK—The Commonhealth, Oct.-Nov. -Dec. 1938. Massachusetts Department of Public Health, Boston.

The entire issue of this quarterly bulletin is devoted to problems relating to milk. Public health and nutritional aspects of the subject are emphasized.

A PRACTICAL PLAN

(Continued from Page Fifteen)

spending of money. A rat feeding demonstration is effective in arousing interest in good diets. The cooperation of the Ohio Valley Dairy Council in providing illustrative material is invaluable. The meal and recreation period provide excellent teaching situations.

The dinners are in charge of students in quantity cookery. They work out attractive, inexpensive menus, market orders, cost and mimeographed material for the mothers, and organize the preparation and service of the dinner. Milk, fruits and vegetables are featured each week. Last year the average cost was 16 cents per capita. The average attendance was 111 persons. Donations of food are secured by a member of the Aid to Dependent Children staff.

Value to the Students—They get experience in applying principles to actual situations: planning adequate family diets at low cost; teaching scientific facts in a simple way to adults and children; directing purposeful activities of children; preparing a meal suited to the needs of varying ages; cooperating with others. They appreciate the factors which contribute to sucessful family life. They are given an insight into social work and its problems. They have an opportunity to develop a sense of responsibility, self-confidence and initiative.

Values to the Families—It is difficult to evaluate these results. However, after conducting the project for 12 years with 200 families, the Aid to Dependent Children Department believes that the many instances of improvement noted in health, child training, social interests and the use of money prove the project of inestimable value.

NUTRITION WORK IN PUBLIC HEALTH PROGRAMS

(Continued from Page Thirteen)

that it is economy as well as humanitarianism to supply dependent families with adequate food or the money to buy it.

The nutritionist in a public-health agency is a consultant and a co-ordinator. Her main job is to see that her colleagues are agreed upon the fundamental facts of nutrition and that they can present sound information as effectively as the food faddist sets forth his dubious claims. She helps the health agency to work with other agencies in the community toward the promotion of abundant health through good nutrition.

A SCIENTIFIC STUDY

(Continued from Page Fifteen)

This study shed light on another interesting point—the seasonal incidence of caries. During the winter-spring period the incidence was distinctly higher than in the autumn-winter period. This indicates the desirability of giving particular attention to the period of greatest susceptibility to caries, namely, the late winter and early spring.

The marked effect of vitamin D, together with observations on the effect of season and exposure to ultra-violet light, lends much support to the thought that nutrition, especially the calcium-phosphorus-vitamin D interrelationship, plays an important role in dental caries prevention.